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EASTERN EUROPEAN ECONOMIC DEVELOPMENTS

Part 1

This report was prepared as part of the US Contribution to a NATO study comparing economic trends in the Free World and in the Sino-Soviet Bloc. The other two parts of the study which relate to East Europe are: Part II, Population and Physical Production and Part III, Foreign Trade.

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TABLE OF CONTENTS

	Page
Prefatory Statement.	11
A. Gross National Product Trends in the European Satellites, 1938-1954	1
B. Gross National Product by Sector of Origin	2
C. Methodology Used in Computing Gross National Products of the European Satellites.	3
1. Base-Year Estimates.	3
2. Method of Computing Industry, Sector and GNP Indexes . . .	4
a. Introduction	4
b. Industry or Industry Group Indexes	5
(1) Prices Used	
(2) Commodities Used	
c. Sector Indexes	6
(1) Industry Sector Indexes	
(a) Value-Added Concept	
(b) Estimation of Value-Added Weights for the Industry Sector	
(c) Reliability of Industry Sector Index	
(2) Other Sector Indexes	
3. GNP Indexes.	8

List of Summary Tables

I. Annual Rate of Change in Gross National Product, 1950-1954 . .	1
II. All Satellite Index by Sector of Origin	2

Statistical Appendix

Table 1 - European Satellite Gross National Product 1938, 1938-1954	9
Table 2 - Indexes of Gross National Product of the European Satellites.	10
Table 3 - European Satellite Gross National Product in 1938. . . .	11
Table 4 - Gross National Product by Sector of Origin: Bulgaria. .	12
Table 5 - Gross National Product by Sector of Origin: Bulgaria. .	12
Table 6 - Gross National Product by Sector of Origin: Czechoslovakia	14
Table 7 - Gross National Product by Sector of Origin: Czechoslovakia	14

~~SECRET~~

Table 8 - Gross National Product by Sector of Origin--East Germany	16
Table 9 - Gross National Product by Sector of Origin--East Germany (Indexes)	16
Table 10 - Gross National Product by Sector of Origin--Hungary	17
Table 11 - Gross National Product by Sector of Origin--Hungary (Indexes)	17
Table 12 - Gross National Product by Sector of Origin--Poland	19
Table 13 - Gross National Product by Sector of Origin--Poland (Indexes)	19
Table 14 - Gross National Product by Sector of Origin--Rumania	21
Table 15 - Gross National Product by Sector of Origin--Rumania (Indexes)	21

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PREFATORY STATEMENT

The physical output data from which the sector indexes and dollar values in this report were derived were estimated partly on the basis of official reports by the Satellite governments and partly on the basis of reports from independent sources of varying reliability. In a number of cases--where two sets of estimates were available and they could not be reconciled within the time limit set for the completion of this report--alternative estimates are shown.

In the case of East Germany, both estimates are presented in this report. The alternate figures are largely based on West German sources and involve prewar weights.

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~~S E C R E T~~A. Gross National Product Trends in the European Satellites, 1938-1954.

Increases in the total value of all goods and services produced (GNP) in the European Satellites since the war have reflected several important phenomena that should be taken into account in interpreting the meaning of changes in Satellite GNP and its future growth. Rapid industrialization of these economies has occurred uniformly under socialization of industry and authoritarian allocation of resources by the state through such means as taxation, compulsory deliveries from agriculture, regimentation of workers, and rationing of consumer goods. In the years immediately after World War II large increases in GNP reflected, essentially, the period of recovery from the disorganization and destruction caused by the war. The reduction of underemployment, which was characteristic of most of the Satellite economies in the prewar period, and the forced acceleration in the use of resources also affected the increases in GNP. In addition, the achieved increases in the stock of capital goods yielded increases in GNP in succeeding periods. Future growth of GNP, however, will come to depend more and more on efficient utilization of resources and increases in productivity as a result of the efforts of labor and management, technological innovation, and continuing increases in the stock of capital equipment of these countries.

The trend of yearly percentage increases (that is, percentage increases of each year over the previous year) of the GNP in all the Satellites was generally downward during the 1950-1954 period. The average of the five yearly percentage increases for this period were as follows: Bulgaria, 4.3 percent; Rumania, 3.3 percent; Czechoslovakia, 5.0 percent; Poland, 7.2 percent; Hungary, 6.2 percent; and East Germany, 10.7 and 9.6 percent. (See footnote b/to Table I.) The high East German average is explained by the lateness of recovery from wartime dislocation, largely caused by USSR policy decisions.

Table I

Annual Rate of Change in Gross National Product, 1950-1954^{a/}

		1950	1951	1952	1953	1954
All Satellites ^{b/}	(1)	11.4	6.5	5.4	8.0	5.4
	(2)	11.5	6.9	5.2	8.0	4.6
Bulgaria		6.3	4.5	2.2	3.5	5.0
Czechoslovakia		4.9	1.3	8.1	7.5	3.2
East Germany ^{b/}	(1)	18.8	11.8	10.6	6.3	6.0
	(2)	17.6	13.4	6.9	6.5	3.7
Hungary		8.9	11.1	5.5	4.2	1.1
Poland		11.8	3.5	2.3	11.1	7.5
Rumania		4.6	9.6	-8.7	7.4	3.4

- a. Because of the considerations advanced in the footnotes to Table 4-15 in the Statistical Appendix below, some of the percentage increases shown here, particularly for the years 1952 to 1954, might be somewhat high. The net effect of the alternate estimates given in the footnotes would be to flatten out the curve, particularly to remove or modify the hump implied by some of the figures for 1952 and 1953. Thus, while a new series would probably also modify the averages given in the text above, it would bear out more aptly the textual comment that the rate-of-increase in GNP during 1950-1954 was generally downward.
- b. These alternative estimates are based on alternative indexes (1) and (2), respectively, in Table 9.

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~~SECRET~~B. Gross National Product by Sector of Origin.

Analysis of GNP by sector of origin reveals the very striking emphasis in all the Satellite countries on industry, transportation and communications, and construction. For the Satellites as a whole these sectors have increased by about 60 percent, 44 percent, and 43 percent, respectively; agriculture, services, and trade, on the other hand, have changed only slightly since 1950.

The agricultural sector indexes shown in Part II reflect the great difficulty which has been experienced by the Satellite governments in attempting to increase agricultural output. Generally the level of production in 1954 was about equal to or slightly below that of 1950. However, 1954 output, compared to 1938, was substantially lower for most Satellites.

Table II

All-Satellite Index by Sector of Origin
(1948 = 100)

All Satellites	1938	1948	1949	1950	1951	1952	1953	1954
Industry ^{a/}	(1) 152	100	117	142	163	184	209	227
	(2) 143	100	120	142	161	178	201	214
Agriculture ^{a/}	(1) 163	100	109	125	128	124	129	130
	(2) 157	100	110	124	125	123	128	129
Transport & Communications	116	100	117	129	142	158	176	186
Building	154	100	111	130	143	160	178	186
Services & Trade	116	100	99	97	97	97	98	102
All Sectors--GNP ^{a/}	(1) 138	100	107	120	127	134	145	153
	(2) 137	100	111	123	132	139	150	157

a. These alternative estimates are based on alternative indexes (1) and (2), respectively, in Table 9.

The course of the transportation and communications sector follows, in general, that of the industrial sector. This is not surprising, for transportation and communications are integral parts of industrial growth. The 1954 index of the transportation and communications sector for all the Satellites combined was 44 percent above 1950.

In general, and as may be seen from Table II above, the industry, transportation and communications, and construction sectors of GNP have been growing at a faster rate than agriculture, services, and trade.

Unfortunately, no adequate time series of investment in the Satellite economies are available at the present time. The stagnation of agriculture compared to the growth shown in industrial output is a reflection of the investment emphasis of the Satellite planners.

The long run effect of a continued emphasis on the production of producer's goods may be expected to be a continuing high rate of growth in the industry and industry-related sectors of the Satellite economies with a resultant increase of the war-making potential of the Sino-Soviet Bloc.

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C. Methodology Used in Computing Gross National Products of the European Satellites.

National accounts series are designed to measure national economic achievement through time. The annual gross national product is the principal aggregate used for this purpose. The gross national product (GNP) is the sum of the values, at market prices, of all goods and services produced by an economy, including the value of the capital goods partially consumed in the production process. It thus measures the totality of economic effort and constitutes the principal current measure of the productive capability of an economy. GNP estimates should be used, however, with appreciation of their limitations, especially in comparing the achievements or productive capabilities of different economies or in developing intertemporal comparisons over a long period within a given economy.

The postwar national accounts estimates developed in this report rest upon prewar figures for the East European countries, which have been manipulated to serve as base-year estimates. Accounts for at least 1 prewar year for each country have been analyzed carefully and adjusted to US national accounting practices. The local currency estimates thus obtained have been converted to a common value unit (1925-1934 US dollars). These estimates, in turn, have been converted to 1951 US dollars in order to facilitate international comparisons for recent years. Finally, in order to use these estimates as base-year figures in developing postwar estimates, they have been adjusted to postwar national boundaries.

For the purpose of constructing indexes of GNP with which to move the base-year estimates, production indexes have been developed from estimates of physical output. Estimates of output for a representative series of goods and services have been aggregated at progressively more inclusive levels, the final level of aggregation being GNP. In aggregating production indexes to higher levels, use has been made of the concept of "value added" to eliminate multiple counting.

This procedure is believed to offer the most reliable basis available at the present time for estimating the growth of GNP in the Satellite economies. Satellite output data appear to be generally reliable. In any event, they are presumably no more likely to have been falsified, and they are more complete and are much less liable to misinterpretation, than the official data available on Satellite national accounts.

The procedure used results in further advantage for the study of the Satellite economies. Production indexes have been aggregated at varied levels, resulting in a wide range of indexes below the GNP level of aggregation. These fractional indexes permit more minute examination of the structure of production (frequently required for specific intelligence problems) than is possible by the simple comparison of GNP estimates.

1. Base-Year Estimates.

The first step taken in the construction of the present series of estimates of the European Satellite GNP is the development of base-year estimates. These are estimates of GNP for 1938 in 1951 US dollars for each of the Satellites, adjusted to a postwar territorial basis.

The prewar GNP estimates have been used in determining the Satellites' postwar national accounts because published postwar official national accounts data are incomplete and the methods of calculation used in developing them are dubious. Although some aggregates are published by the individual European Satellites, these data appear irregularly, and there is not a complete set for any year or for any country. Where constant prices are used, some countries use postwar prices; others, prewar prices. Where "national income" aggregates are published, the Satellites use

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the Communist "net material product" concept, which omits a large amount of services not directly connected with material production. The published announcements do not explain in detail how these aggregates are constructed, and there is no assurance that methodology is consistent either as among the various Satellites or as among different time periods. Thus use of officially published aggregative data is not feasible for making the international and intertemporal comparisons that are needed for intelligence purposes.

The procedure for making the base-year estimates falls into three phases: (1) an estimate of 1938 GNP in local currency, (2) an estimate of 1938 GNP in 1951 US dollars, and (3) the adjustment of both figures to a postwar territorial basis.

Prewar national accounts data for the European Satellites are available from various sources. These have been manipulated so as to conform to the US concept of GNP, by the addition of omitted services, the conversion from a factor-price to a market-price basis, and the adjustment from a net to a gross product basis (including an allowance for capital consumption) as required. The development of dollar estimates depends heavily on the work of Colin Clark, who estimated the national accounts of most of the countries in the world in 1925-1934 US dollars, which he called International Units (I.U.). These dollar estimates have been converted to 1951 dollars by the US retail price index and then adjusted for postwar boundary changes, usually on the basis of prewar population and per capita production data.

In the conversion of GNP from local currencies to dollars, no use has been made of official or other foreign exchange rates except for Bulgaria. For the other countries the method used by Colin Clark is based on a direct comparison of internal prices of consumption goods and services in the US with those of each of the other countries for the year 1939. Since comparative price data for investment goods and government services were generally unavailable, Clark assumed that conversion rates for these would be approximately the same as for consumption goods. He obtained overall conversion ratios of each currency to dollars by weighting the individual commodity and service price ratios by quantities of commodities and services consumed, both in the US and in the other country. These two weighted averages are typically different, since the consumption patterns are different. The geometric mean of these two is the conversion ratio finally adopted.

The price data available to Clark varied in coverage from country to country. Of the Central and Eastern European countries, only Germany had data showing the distribution of consumption expenditure as a whole (for the period 1927-1928). For Czechoslovakia, data were available on consumption expenditures in the early 1930's for various income levels of wage and salary earners. For other countries, price data were available on only food, rent, and fuel. Price ratios (dollar to local currency) on these items were adjusted by Clark to total consumption coverage by applying factors (the relationship of the sample of price ratios, the overall price ratio, and income per head) which he obtained for those countries on which more data were available. For Bulgaria, no price data were available, and Clark employed the foreign exchange rate between the dollar and the leva.

2. Method of Computing Industry, Sector, and GNP Indexes.

a. Introduction.

The second step in constructing the present estimates of European Satellite GNP is the construction of an index with which to move the base-year estimates. This has been done in several stages.

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First, production indexes for about 100 commodities have been constructed and grouped into 22 industry or industry groups. Aggregation at this level involves the valuation of production in terms of constant prices, so that the resulting values can be summed and compared over time.

After industry indexes are computed, there is an aggregation problem involved in grouping related indexes into six income- or originating sectors of GNP. The methodology of aggregation varies from very simple, as for the agriculture sector--where the aggregation simply involves summing values, as for a single industry index--to the rather complicated technique for the industry sector, where value-added weights have been derived for the component industry groups from employment data.

The final level of aggregation involves the computation of a series of weights. These permit the aggregation of the sectors into GNP indexes, which then are used to move the base-year estimates (see under A, above).

In the present section the general methodology for the three levels of aggregation--industry or industry groups, sector, and GNP--will be discussed in turn.

b. Industry or Industry Group Indexes.

The building block of the industry index is the production index for a commodity. The industry index consists of one or more production indexes. The production indexes measure changes in physical production of the subject commodities through time.

(1) Prices Used.

Since it is not possible to aggregate physical units of different commodities, some common system of value must be used for weighting. A set of constant prices has been used in order to eliminate the impact of general price changes.

Use of constant money prices (in this case prices used for planning purposes) creates certain inaccuracies which should be understood by the reader. Maintenance of constant price relationships through time tends to eliminate the impact of technological change. Constant prices also tend to eliminate changes in the structure of demand for final goods. It should be noted, however, that sufficient changes to distort the index in any statistically significant sense occur and usually develop gradually. Periodic revision of the price series through time will usually eliminate this problem. It is not believed that the impact of technological changes in the Satellite countries from 1938 to 1949 is such as to preclude the use of the planning prices for the Satellites (usually 1948-1950 prices) as value weights.

Relatively complete lists of local planning prices are available in usable form only for Czechoslovakia, East Germany, and Hungary. Reflecting as they do the postwar and post-Communist scarcity relationships and the price basis used for current planning, these prices represent the best measure for recent years which is currently available. Hungarian prices have been used for the other Satellites (Poland, Rumania, and Bulgaria), on the grounds that the Hungarian product relationships would offer a closer approximation to these mixed agricultural and industrial economies than would the prices of highly industrialized Czechoslovakia and East Germany.

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~~SECRET~~(2) Commodities Used.

No attempt has been made to cover exhaustively the commodities within each industry or industry group. It has been assumed that detailed reporting of the principal products for each industry yields a satisfactory level of accuracy, since a few key commodities usually constitute a preponderance of the value of output within an industry.

Development of production indexes by the procedure of analyzing commodity outputs appears to offer the firmest entry to the European Satellite economies currently available. The data published on national aggregates are fragmentary and cannot be interpreted with certainty. On the other hand, the physical output estimates used in this report rest on extensive data, which may be checked for internal consistency.

c. Sector Indexes.

For the purposes of this report, GNP is divided into the following income-originating sectors: industry, agriculture, transport and communications, construction, services, and trade. Discussion of the aggregation of indexes for these sectors follows:

(1) Industry Sector Indexes.(a) Value-Added Concept.

The industry indexes, which are constructed with the use of price weights, measure changes in gross value of output. In a complex modern economy a substantial part of the gross value of output of each industry is produced by other industries from which materials and services are purchased: for example, gross value of output of the automobile industry includes some of the value of output produced by the steel industry. Overlapping relationships of this sort must be allowed for if an accurate measure of the contribution of the industry to the economy is to be computed. Since individual industries or industry groups contribute only a portion of the final value of industrial output, it is necessary to weight the industry indexes by the contributions each industry makes to the final industrial product. The latter concept is "value-added". This measure eliminates multiple counting in the development of the industry sector indexes.

Value added may be defined as a measure of the net addition to the value of the product contributed by a specific producing entity. The usual measure of value added is the sum of the wage bill, the capital consumption allowance, and the profits in the industry in question. Data in this detail have not been developed yet for the Satellite countries.

(b) Estimation of Value-Added Weights for the Industry Sector.

The value-added weights employed herein are derived primarily from estimated industrial manpower allocations (except for East Germany, where the weights represent net value added in 1948).^{a/} Employment estimates by major industrial groups are available for the recent years 1952-1953. Production data have been used to perform detailed breakdowns, for the major industries. This technique permits the development of a series of value-added weights, which make possible in turn the development of a credible industry sector index.

a. Derived from net value added in 1936, projected to 1948 on basis of physical production indexes.

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Use of employment data involves the assumption that the productivity of labor in industrial employments is uniform. As a matter of practice, labor productivity increases as the concentration of capital per unit of labor increases. More than this, the technique more or less implicitly assumes that the labor cost imputed in the preceding manner constitutes the sole measure of value added. Thus there is the added implicit assumption that the covariation of depreciation (capital consumption allowances) and profits is identical with the variation in the labor force employed in the industry. The acceptability of employment data as a basis for computing for value-added weights is attested to by such independent checks as have become available thus far. The East German and Hungarian estimates of value added appear to coincide in general with the weights which have been developed from crude employment data. The present lack of information on wage payments, depreciation, and profits in the Satellites, however, would make it necessary to use the above technique even if it were less reliable than it appears to be.

(c) Reliability of Industry Sector Index.

The reliability of the sector index is essentially a function of the reliability of its constituents. The principal constituents of the index are three: physical production reports for commodities and services, prices employed to value these commodities and services, and value-added weights developed to control multiple counting.

It is believed that the physical production estimates are broad enough in scope and sufficiently accurate to permit the development of a useful production index. In general, in industries or industry groups where the value-added weights are 5 or less there is a maximum margin of error of plus or minus 10 percent. In the highest value-added weight categories (10 and above), the margin of error usually lies within plus or minus 5 percent of the absolute production figures.^{a/}

The price structure employed to value output is believed to be representative of scarcity relationships for the countries for which specific prices are available and reasonably reliable for the other countries, to which the Hungarian price structure is imputed.

(2) Other Sector Indexes.

The agricultural sector is simply a summation of the values of various agricultural products, in constant prices, and its formulation involves the computation of an index of production similar to the industry group indexes. The same is true of the transport and communications sector index. For the construction sector, also, a production index has been used, employing selected building materials.

The services sector index is assumed to move in accordance with population changes. In the absence of specific data for services, it is assumed that per capita increases in government services, (health, education, and the like) roughly offset declines in the area of personal or private services in the Satellite countries.

The trade sector index has been obtained by means of employment in the retail and wholesale trade establishments. This technique has been checked against specific pronouncements about the share of

a. Many of the individual estimates upon which this report is based are believed to err only on the positive or on the negative side, but the margin of error expressed in the text, if accepted as an average of the individual estimates' margins of error, does not do violence to the facts. The estimates with these margins of error have a 95-percent confidence limit.

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trade in GNP in the early postwar period, during which time many of the European Satellites kept national accounts in a framework roughly comparable to that employed in this report.

3. GNP Indexes.

The GNP indexes, like the industry sector indexes, must measure the real change in production of all final goods and services over time. The sector weights therefore should represent gross value added^a by each sector.

The usual method of measuring real changes in GNP is to construct GNP in current prices for various years and to reduce the series to a constant price measure by the use of appropriate price indexes. This method requires reliable current value aggregates and comprehensive price information, both of which are unavailable for the European Satellites. In the absence of these, the method of aggregation of production information into GNP indexes has been used.

Value-added weights for sectors of GNP have been developed by various means. For Poland, Czechoslovakia, and Hungary, official published estimates have been adjusted to fit the classification of sectors used in this report. For East Germany, prewar gross value added has been used. For Rumania, sector weights have been developed by analogy with those for other Satellites. For Bulgaria, weights published by the UN have been used.

a. Net value plus depreciation.

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STATISTICAL APPENDIX

Table 1

European Satellite Gross National Product 1938, 1948-1954^{a/b/}

Billions of 1951 US Dollars								
	<u>1938</u>	<u>1948</u>	<u>1949</u>	<u>1950</u>	<u>1951</u>	<u>1952</u>	<u>1953</u>	<u>1954</u>
Bulgaria	1.00	1.04	1.02	1.08	1.13	1.16	1.20	1.26
Czechoslovakia	7.30	6.76	7.21	7.56	7.66	8.28	8.90	9.18
East Germany ^{c/}	(1) 16.10	8.95	9.54	11.33	12.67	14.02	14.91	15.80
	(2) 16.20	9.30	10.80	12.70	14.40	15.40	16.40	17.00
Hungary	2.50	2.00	2.24	2.44	2.71	2.86	2.98	3.01
Poland	14.50	10.99	12.11	13.54	14.02	14.34	15.93	17.12
Rumania	3.10	2.57	2.60	2.72	2.98	2.72	2.92	3.02
Total ^{c/}	(1) <u>44.50</u>	<u>32.31</u>	<u>34.72</u>	<u>38.67</u>	<u>41.17</u>	<u>43.38</u>	<u>46.84</u>	<u>49.39</u>
	(2) <u>44.60</u>	<u>32.66</u>	<u>35.98</u>	<u>40.04</u>	<u>42.90</u>	<u>44.76</u>	<u>48.33</u>	<u>50.59</u>

a. Excluding Albania.

b. Some of the GNP figures and indexes, particularly for 1952-1954, seem to err on the high side. See footnotes to textual Table I above and to Tables 4-15 below.

c. These alternative estimates are based on alternative indexes (1) and (2), respectively, in Table 9.

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Table 2

Indexes of Gross National Product of the European Satellites
1938 and 1948-1954^{a/b/}

	1948 = 100							
	<u>1938</u>	<u>1948</u>	<u>1949</u>	<u>1950</u>	<u>1951</u>	<u>1952</u>	<u>1953</u>	<u>1954</u>
Bulgaria	95	100	98	103	108	111	115	121
Czechoslovakia	108	100	106	112	113	122	132	136
East Germany ^{c/}	(1) 180	100	107	127	142	157	167	177
	(2) 176	100	116	137	155	166	176	183
Hungary	125	100	112	122	136	143	149	151
Poland	132	100	110	123	128	130	145	156
Rumania	120	100	101	106	116	106	114	118
All Satellites ^{c/}	(1) 138	100	107	120	127	134	145	153
	(2) 137	100	111	123	132	139	150	157

a. Excluding Albania.

b. Some of the GNP figures and indexes, particularly for 1952-1954, seem to err on the high side. See footnotes to textual Table I above and to Tables 4-5.

c. These alternative estimates are based on alternative indexes (1) and (2), respectively, in Table 9.

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Table 3
European Satellite Gross National Product in 1938^{a/}
Local Currency

			Billion Units
	Unit	Amount	Billion 1951 US Dollars
Bulgaria	1938 leva	62.9	1.0
Czechoslovakia	1938 koruna	65.5	7.3
East Germany	1938 RM	25.0	16.1
Hungary	1938 pengoes	6.6	2.5
Poland	1938 zloty	26.7	14.5
Rumania	1929 lei	224.0	3.1
			<u>44.5</u>

a. Excluding Albania

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Table 4

Gross National Product by Sector of Origin: Bulgaria*

	Billions of 1951 US Dollars							
	1938	1948	1949	1950	1951	1952	1953	1954
Industry ^{a/}	0.19	0.19	0.21	0.25	0.29	0.34	0.37	0.40
Agriculture	0.52	0.52	0.47	0.48	0.49	0.46	0.46	0.49
Transportation & Communication	0.02	0.04	0.04	0.05	0.05	0.06	0.06	0.06
Construction	.003	.006	.008	.008	.010	.011	.012	.014
Services and Trade	0.26	0.29	0.29	0.29	0.30	0.30	0.30	0.29
Total	1.00	1.04	1.02	1.08	1.13	1.16	1.20	1.26

* In this table and similar tables for each of the Satellite countries all sector values do not add to the total due to rounding.

Table 5

Gross National Product by Sector of Origin: Bulgaria
(Indexes)

	1948 = 100							
	1938	1948	1949	1950	1951	1952	1953	1954
Industry ^{a/}	98	100	110	133	152	177	192	210
Agriculture	101	100	90	93	94	88	89	95
Transportation & Communications	68	100	117	127	138	150	167	175
Construction	51	100	132	149	170	194	213	253
Services and Trade	89	100	100	101	101	101	102	100

a. While the value-added concept used in the tables would differ considerably in its results from the gross concept used in Satellite reporting, it might be expected that there would be two rather stable elements in the relationship between the two: (1) that the two indexes would move roughly in the same direction, and (2) that the annual percentage increases derived by the value-added concept would, at this stage of Satellite economic development, invariably be smaller than those reported by a Satellite government, using the gross concept. Comparison of official Bulgarian reports for the years 1954 with the annual percentage increases implied in Table 4, is as follows:

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	<u>Percent Increase over Previous Year</u>				
	<u>1950</u>	<u>1951</u>	<u>1952</u>	<u>1953</u>	<u>1954</u>
Bulgarian reports*	23.0	19.0	18.0	12.0	8.7
Estimates in this report	19.0	16.0	17.2	8.8	8.7

An observation can usefully be made about this comparison: The value-added series shows a higher percentage increase for 1952 than for the previous year, while the Bulgarian series shows a steady decline in the rate-of-increase of gross industrial output during the whole five-year period.

The above comparison suggests that the indexes shown in the table for the years 1952-1954 for industrial output, and hence for total GNP, may be too high.

* Source: Rabotnichesko Delo of Jan. 27, 1951, Feb. 2, 1952, Jan. 30, 1953, Feb. 3, 1954, and Jan. 27, 1955, citing annual plan fulfillment reports by the Central Statistical Administration of Bulgaria.

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Table 6

Gross National Products by Sector of Origin: Czechoslovakia

	Billions of 1951 US Dollars							
	<u>1938</u>	<u>1948</u>	<u>1949</u>	<u>1950</u>	<u>1951</u>	<u>1952</u>	<u>1953</u>	<u>1954</u>
Industry ^{a/}	2.33	2.70	3.00	3.08	3.24	3.62	4.16	4.34
Agriculture ^{b/}	1.72	1.15	1.26	1.38	1.38	1.50	1.47	1.44
Transportation & Communication	0.36	0.49	0.55	0.61	0.62	0.73	0.79	0.83
Construction	0.32	0.29	0.30	0.36	0.39	0.41	0.43	0.44
Services and Trade	2.55	2.14	2.12	2.11	2.03	2.04	2.05	2.15
Total	<u>7.30</u>	<u>6.76</u>	<u>7.21</u>	<u>7.56</u>	<u>7.66</u>	<u>8.28</u>	<u>8.90</u>	<u>9.18</u>

Table 7

Gross National Product by Sector of Origin: Czechoslovakia
(Indexes)

	1948 = 100							
	<u>1938</u>	<u>1948</u>	<u>1949</u>	<u>1950</u>	<u>1951</u>	<u>1952</u>	<u>1953</u>	<u>1954</u>
Industry ^{a/}	86	100	110	114	120	134	154	161
Agriculture ^{b/}	150	100	110	120	120	131	128	126
Transportation & Communication	72	100	113	124	126	150	161	169
Construction	109	100	103	124	132	140	147	150
Services and Trade	119	100	99	98	95	94	96	101

a. Citing the considerations advanced in footnote a/ to Tables 4 and 5, the following comparison between annual increases for gross industrial output as reported by Czechoslovakia and the annual increases implied by the above figures on a value-added concept are presented:

	Percent Increase over Previous Year				
	<u>1950</u>	<u>1951</u>	<u>1952</u>	<u>1953</u>	<u>1954</u>
Czechoslovak reports	15.0 ^{1/}	15.0 ^{2/}	18.3 ^{3/}	10.0 ^{4/}	4.4 ^{5/}
Estimates in this report	2.7	5.2	11.7	14.9	4.4

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~~SECRET~~Tables 6 and 7 continued

Two observations are in order: (1) the value-added estimate for 1953 shows a higher percentage increase than that reported by Czechoslovakia, using the gross concept; (2) the value-added series follows the general movement of the gross series except in 1953, where a larger rate-of-increase is shown than in the previous year, exactly the opposite of the movement indicated by the gross series. The 1953 development indicated by the value-added series is surprising in view of known difficulties in Czechoslovak industrial operations during 1953, leading to adoption, in mid-year, of a "new course" with somewhat lowered output goals in many important industrial production lines.

The above comparison suggests that the indexes of industrial output shown in the tables for 1953 and 1954 may be too high and that hence the GNP index may exaggerate particularly the movement between 1952 and 1953.

- b. The official Czechoslovak index for gross agricultural production is lower for the years 1949 to 1954 than that shown in the tables. The official Czechoslovak index is given below, along with the GNP figures these would imply for tables 6 and 7:

<u>Table 6 (1951 US dollars)</u>	<u>1938</u>	<u>1948</u>	<u>1949</u>	<u>1950</u>	<u>1951</u>	<u>1952</u>	<u>1953</u>	<u>1954</u>
Agriculture	1.72	1.15	1.21	1.28	1.28	1.35	1.31	1.28
Total GNP	7.30	6.76	7.16	7.46	7.56	8.13	8.74	9.01

Table 7 (indexes)

Agriculture 6/	150	100	105	111	111	117	114	111
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1. Source: Hospodar, Feb. 1, 1951.
2. Source: Official Gazette, Part 13, Jan. 31, 1952.
3. Source: Official Gazette, Part 16, Feb. 3, 1953.
4. Source: Official Gazette, Part 14, Feb. 2, 1954.
5. Source: Official Gazette, Part 6, Feb. 6, 1955.
6. 1953 index from Svobodne Slovo, Nov. 17, 1954; indexes for other years interpolated on the basis of annual percent changes as shown in Table 7 above.

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Table 8

Gross National Product by Sector of Origin: East Germany

		Billions of 1951 US Dollars							
		1938	1948	1949	1950	1951	1952	1953	1954
Industry ^{a/}	(1)	7.68	2.81	3.34	4.86	5.93	6.92	7.60	8.36
	(2)	8.10	3.70	4.70	6.10	7.20	7.90	8.60	9.00
Agriculture ^{b/}	(1)	2.62	1.36	1.47	1.76	2.08	2.08	2.10	2.10
	(2)	2.55	1.60	1.80	2.00	2.20	2.30	2.30	2.30
Transportation & Communication		0.94	0.54	0.67	0.69	0.80	0.88	1.00	1.06
Construction		1.02	0.49	0.52	0.60	0.69	0.76	0.84	0.89
Services and Trade		4.12	3.67	3.59	3.39	3.34	3.35	3.37	3.42
Total	(1)	16.10	8.95	9.54	11.33	12.67	14.02	14.91	15.80
	(2)	16.20	9.30	10.80	12.70	14.40	15.40	16.40	17.00

- a. These alternative estimates are based on indexes B(1) and B(2), respectively, in Table 25, Part II, Population and Physical Production.
- b. These alternative estimates are based on B Indexes (1) and (2), respectively, in Table 18, Part II, Population and Physical Production.

Table 9

Gross National Product by Sector of Origin: East Germany
(Indexes)

		1948 = 100							
		1938	1948	1949	1950	1951	1952	1953	1954
Industry ^{a/}	(1)	273	100	119	173	211	246	270	297
	(2)	219	100	127	165	195	214	232	243
Agriculture ^{b/}	(1)	192	100	108	129	152	152	154	154
	(2)	159	100	113	125	138	144	144	144
Transportation & Communication		174	100	124	128	148	163	185	196
Construction		209	100	107	124	141	155	172	183
Services and Trade		112	100	98	92	91	91	92	93
Total	(1)	180	100	107	127	142	157	167	177
	(2)	174	100	116	137	155	166	176	183

- a. These alternative estimates are based on indexes B(1) and B(2), respectively, in Table 25, Part II, Population and Physical Production.
- b. These alternative estimates are based on B Indexes (1) and (2), respectively, in Table 18, Part II, Population and Physical Production.

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Table 10

Gross National Product by Sector of Origin: Hungary

	Billions of 1951 US Dollars							
	<u>1938</u>	<u>1948</u>	<u>1949</u>	<u>1950</u>	<u>1951</u>	<u>1952</u>	<u>1953</u>	<u>1954</u>
Industry ^{a/}	0.81	0.71	0.86	1.02	1.21	1.38	1.48	1.52
Agriculture ^{b/}	0.91	0.54	0.61	0.62	0.65	0.61	0.59	0.58
Transportation & Communication	0.08	0.06	0.07	0.08	0.08	0.09	0.10	0.10
Construction	0.07	0.07	0.09	0.14	0.15	0.18	0.20	0.18
Services and Trade	0.62	0.60	0.59	0.60	0.60	0.61	0.61	0.62
Total	<u>2.50</u>	<u>2.00</u>	<u>2.24</u>	<u>2.44</u>	<u>2.71</u>	<u>2.86</u>	<u>2.98</u>	<u>3.01</u>

Table 11

Gross National Product by Sector of Origin: Hungary
(Indexes)

	1948 = 100							
	<u>1938</u>	<u>1948</u>	<u>1949</u>	<u>1950</u>	<u>1951</u>	<u>1952</u>	<u>1953</u>	<u>1954</u>
Industry ^{a/}	114	100	121	144	171	194	208	214
Agriculture ^{b/}	167	100	113	114	121	113	109	105
Transportation & Communication	134	100	110	123	138	151	164	164
Construction	106	100	135	203	226	268	294	265
Services and Trade	103	100	99	99	100	101	101	103

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~~SECRET~~Footnotes to Tables 10 and 11

- a. Citing the considerations advanced in footnote a/to Tables 4 and 5, attention is called to the following comparison between annual increases for gross industrial output as reported by Hungary and the annual increases implied by the above figures on a value-added concept:

	<u>Percent Increase over Previous Year</u>				
	<u>1950</u>	<u>1951</u>	<u>1952</u>	<u>1953</u>	<u>1954</u>
Hungarian reports*	35.0	30.0	23.6	11.8	3.1
Estimates in this report	18.6	18.6	14.0	7.2	3.1

While the relationship between the two series appears generally reasonable, it should be pointed out that the value-added series shows no increase in the rate of growth during 1951, while the Hungarian gross series shows a decrease in the same year. The above comparison indicates some upward error in the indexes shown for industrial production, and hence total GNP, in the years 1951-1954.

- b. Official Hungarian indexes of agricultural output during the years 1949-1952 were given as follows: 1949--115, 1950--132, 1951--159, and 1952--133.** Although no index was given by the Hungarian government in 1953, the harvest of grains in that year is known to have been higher than in 1952, which was a drought year. The above tables, however, show agricultural output in 1953 to have been lower than in 1952. For 1954 the proportionate decline indicated in the above tables appears reasonable.

In accordance with these considerations, the following alternate estimates to the figures in Tables 10 and 11 could be considered:

Table 10

	<u>Billions of 1951 US Dollars</u>							
	<u>1938</u>	<u>1948</u>	<u>1949</u>	<u>1950</u>	<u>1951</u>	<u>1952</u>	<u>1953</u>	<u>1954</u>
Agriculture	0.91	0.54	0.62	0.71	0.86	0.72	0.76	0.74
Total	2.50	2.00	2.25	2.53	2.92	2.97	3.15	3.20

Table 11

	<u>Index 1948 = 100</u>							
Agriculture	167	100	115	132	159	133	140	137

* Source: Szabad Nep, January 27, 1951, Jan. 20, 1952, Jan. 20, 1953, Jan. 27, 1954, and Jan. 30, 1955.

** Source: Tarsadalmi Szemle, April-May 1953, page 433, adjusted to 1948 = 100.

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Table 12

Gross National Product by Sector of Origin: Poland

	Billions of 1951 US Dollars							
	<u>1938</u>	<u>1948</u>	<u>1949</u>	<u>1950</u>	<u>1951</u>	<u>1952</u>	<u>1953</u>	<u>1954</u>
Industry ^{a/}	3.30	2.89	3.48	4.00	4.48	4.89	5.89	6.54
Agriculture	5.05	2.89	3.33	4.13	3.85	3.65	4.01	4.09
Transportation & Communication	0.60	0.57	0.67	0.77	0.86	0.93	1.04	1.12
Construction	0.39	0.31	0.37	0.41	0.43	0.50	0.59	0.63
Services and Trade	5.21	4.27	4.26	4.28	4.37	4.39	4.40	4.75
Total	<u>14.50</u>	<u>10.99</u>	<u>12.11</u>	<u>13.54</u>	<u>14.02</u>	<u>14.34</u>	<u>15.93</u>	<u>17.12</u>

Table 13

Gross National Product by Sector of Origin: Poland
(Indexes)

	1948 = 100							
	<u>1938</u>	<u>1948</u>	<u>1949</u>	<u>1950</u>	<u>1951</u>	<u>1952</u>	<u>1953</u>	<u>1954</u>
Industry ^{a/}	114	100	120	139	155	169	204	226
Agriculture	175	100	115	143	133	126	139	142
Transportation & Communication	105	100	116	134	151	162	182	196
Construction	124	100	117	130	138	158	189	202
Services and Trade	122	100	96	93	94	103	103	111

~~SECRET~~Footnote to Tables 12 and 13.

- a. Citing the considerations advanced in footnote a/to Tables 4 and 5, attention is called to the following comparison between annual increases for gross industrial output was reported by Poland and the annual increases implied by the above figures on a value-added concept:

	<u>Percent Increase over Previous Year</u>				
	<u>1950</u>	<u>1951</u>	<u>1952</u>	<u>1953</u>	<u>1954</u>
Polish reports*	30.8	24.0	20.0	17.5	11.0
Estimates in this report	14.9	11.2	10.9	20.4	11.0

Two observations are in order: (1) the value-added estimate for 1953 shows a higher percentage increase than that reported by Poland, using the gross concept; (2) the value-added estimate for 1953 also indicates an increase in the rate-of-growth over that recorded in 1952, whereas the Polish gross series shows a further decline.

The above comparison suggests that the indexes of industrial output shown in the tables and hence the total GNP indexes, for 1953 and 1954 may be too high and may exaggerate particularly the movement between 1952 and 1953.

* Source: Gospodarka Planowa No. 2, 1951 and No. 2, 1952; Zycie Gospodarcze No. 6, 1953, No. 4, 1954 and No. 4, 1955.

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Table 14

Gross National Product by Sector of Origin: Rumania

	Billions 1951 US Dollars							
	<u>1938</u>	<u>1948</u>	<u>1949</u>	<u>1950</u>	<u>1951</u>	<u>1952</u>	<u>1953</u>	<u>1954</u>
Industry ^{a/}	0.61	0.50	0.61	0.72	0.82	0.91	1.01	1.08
Agriculture	1.14	0.86	0.81	0.80	0.89	0.76	0.84	0.83
Transportation & Communication	0.12	0.12	0.13	0.15	0.17	0.19	0.21	0.21
Construction	0.05	0.04	0.05	0.05	0.06	0.07	0.08	0.09
Services and Trade	0.87	0.83	0.81	0.80	0.81	0.79	0.78	0.77
Total	<u>3.10</u>	<u>2.57</u>	<u>2.60</u>	<u>2.72</u>	<u>2.98</u>	<u>2.72</u>	<u>2.92</u>	<u>3.02</u>

Table 15

Gross National Product by Sector of Origin: Rumania
(Indexes)

	1948 = 100							
	<u>1938</u>	<u>1948</u>	<u>1949</u>	<u>1950</u>	<u>1951</u>	<u>1952</u>	<u>1953</u>	<u>1954</u>
Industry ^{a/}	120	100	120	142	162	180	200	214
Agriculture	133	100	94	93	104	89	98	97
Transportation & Communication	100	100	112	128	148	159	178	178
Construction	129	100	121	140	156	177	208	237
Services and Trade	105	100	98	95	96	95	94	93

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Footnote to Tables 14 and 15.

- a. Citing the considerations advanced in footnote a/to Tables 4 and 5, attention is called to the following comparison between annual increases for gross industrial output as reported by Rumania and the annual increases implied by the above figures on a value-added concept.

	<u>Percent Increase over Previous Year</u>				
	<u>1950</u>	<u>1951</u>	<u>1952</u>	<u>1953</u>	<u>1954</u>
Rumanian reports*	37.0	29.0	23.0	14.4	6.6
Estimates in this report	18.0	13.9	11.0	11.0	6.6

An observation is in order: The value-added estimate for 1953 shows the same increase in the rate-of-growth as compared to 1952, whereas the official report of gross output shows a downward trend.

The above comparison suggests that the indexes of industrial output, and hence total GNP, shown in the tables for 1953 and 1954, may be too high, and may exaggerate particularly the movement between 1952 and 1953.

* Source: Scanteia Feb. 2, 1951 and Feb. 1, 1952; Scinteia Jan. 23, 1953, Feb. 11, 1954 and Feb. 1, 1955.

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ADDENDUM TO

US DOC. E-1

EASTERN EUROPEAN ECONOMIC DEVELOPMENTS

Part I

1. Table 1. Commodities Used in Constructing Industry Indexes for European Satellites.
2. Table 2. Commodities Used in Constructing Agricultural Indexes for European Satellites.

October 6, 1955

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TABLE 1

COMMODITIES USED ON CONSTRUCTING INDUSTRY INDEXES FOR EUROPEAN SATELLITES a/
IN US DOC. E-1

Commodity	Bulgaria	Czechoslovakia	E. Germany	Hungary	Poland	Rumania
Shipbuilding	X	X	X	X	X	X
Electric Power	X	X	X	X	X	X
Antifriction Bearings	O	X	X	X	X	X
Cotton Fabric	X	X	X	X	X	X
Wool Fabric	X	X	X	X	X	X
Silk and Synthetic Fabrics	X	X	X	X	X	X
Footwear	X	X	X	X	X	X
Machine Tools	X	X	X	X	X	X
Trucks	O	X	X	X	X	O
Passenger Cars	O	X	X	X	X	X
Tractors	O	X	X	X	X	X
Freight Cars	X	X	X	X	X	X
Steam Locomotives	O	X	X	X	X	O
Electric Locomotives	O	X	O	X	X	X
RR Passenger Cars	O	O	X	X	O	O
Textile Machinery	O	O	X	O	X	X
Electrical Equipment	X	X	X	X	X	X
Rubber Tires	X	X	X	X	X	O
Reclaimed Rubber	X	X	X	O	X	O
Synthetic Rubber	O	X	X	O	X	O
Sulfuric Acid	X	X	X	X	X	X
Nitric Acid	X	X	X	X	X	X
Synthetic Ammonia	X	X	X	X	X	X
Caustic Soda	O	X	X	X	X	X
Chlorine	O	X	X	X	X	X
Calcium Carbide	X	X	X	X	X	X
Refined Benzol	O	X	X	O	X	X
Toluol	O	X	X	O	X	X
Refined Phenol	O	X	X	X	X	X

TABLE 1 (Continued)

Commodity	Bulgaria	Czechoslovakia	E. Germany	Hungary	Poland	Rumania
Naphthalene	X	O	X	X	X	X
Uranium	O	O	X	O	O	O
Potash	O	O	X	O	O	O
Fuel Wood	X	X	X	X	X	X
Industrial Wood	X	X	X	X	X	X
Cement	X	X	X	X	X	X
Bricks	X	X	X	X	X	X
Gasoline	O	X	X	X	X	X
Kerosene	O	X	X	X	X	X
Distilled Fuel Oils	O	X	X	X	X	X
Residual Fuel Oils	O	X	X	X	X	X
Lubricants	O	X	X	X	X	X
Fluorspar	X	C	X	O	O	O
Lead	X	X	X	O	O	X
Zinc	X	O	X	O	X	X
Refined Copper	X	X	X	O	X	X
Pyrite Ore	X	X	X	X	X	X
Primary Aluminum	O	X	X	X	X	X
Secondary Aluminum	O	X	X	X	X	X
Antimony	O	X	X	O	O	O
Mercury	O	X	O	O	O	O
Primary Tin	O	O	X	O	O	O
Bauxite	O	O	X	X	O	X
Pig Iron	O	X	X	X	X	X
Finished Steel	X	X	X	X	X	X
Hard Coal	X	X	X	X	X	X
Lignite and Brown Coal	X	X	X	X	X	X
Animal Fats	X	X	X	X	X	X
Vegetable Oil	X	X	X	X	X	X
Sugar	X	X	X	X	X	X
Meat	X	X	X	X	X	X

TABLE 1 (Continued)

Commodity	Bulgaria	Czechoslovakia	E. Germany	Hungary	Poland	Rumania
Flour	X	X	X	X	X	X
Milk	X	X	X	X	X	X
Tanks	O	X	O	O	X	O
Small Arms	O	X	X	X	X	X
Artillery and Tank Guns	O	X	O	O	O	O
Tank Guns	O	O	O	O	X	O
Mortars	O	X	O	X	O	X
Ammunition	O	X	X	X	X	X
Aircraft	X	X	X	X	X	X
Naval Vessels	X	X	X	X	X	X
Optical Instruments	O	X	X	X	X	X

a. Excluding Albania.

x Indicates commodity used in constructing index.

O Indicates commodity not used in constructing index.

TABLE 2

COMMODITIES USED ON CONSTRUCTING AGRICULTURAL INDEXES
FOR EUROPEAN SATELLITES a/ IN US DOC. E-1

Bulgaria Czechoslovakia E. Germany Hungary Poland Rumania

INDUSTRIAL CROPS

Cotton, Ginned	X	O	X	O	X	X	X
Wool, Grease Basis	X	X	X	X	X	X	X
Hemp	X	X	X	X	X	X	X
Flax, Scutched Basis	X	X	X	X	X	X	X
Sugar Beets	X	X	X	X	X	X	X

FOOD CROPS

Bread Grains b/	X	X	X	X	X	X	X
Coarse Grains c/	X	X	X	X	X	X	X
Rice (paddy)	X	X	X	X	X	X	X
Potatoes	X	X	X	X	X	X	X
Meat	X	X	X	X	X	X	X
Animal Fats	X	X	X	X	X	X	X
Milk	X	X	X	X	X	X	X

x Indicates commodity used in constructing index.
o Indicates commodity not used in constructing index.

a. Excluding Albania.

b. Wheat and rye.

c. Barley, oats, and corn.